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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/835,691

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Anthony Vetro

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08/10/2006

Patent Department

Mitsubishi Electric Research Laboratories, Inc.

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Cambridge, MA 02139

EXAMINER

CZEKAJ, DAVID J

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/835,691	<b>Applicant(s)</b> VETRO ET AL.	
	<b>Examiner</b> Dave Czekaj	<b>Art Unit</b> 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☒ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

On page 5, applicant argues that nowhere does Walker disclose determining any type of distortion. While the applicant's points are understood, the examiner respectfully disagrees. See for example Walker column 10, lines 18-20. There Walker discloses that the current invention offers a way for removing random noise, or distortion, from a video sequence. Therefore the rejection has been maintained.

On pages 8-9, applicant argues that Ribas fails to disclose jointly minimizing an average total distortion in the entire video. While the applicant's points are understood, the examiner respectfully disagrees. See for example Ribas column 6, line 67 – column 7, line 2. There Ribas discloses that in order to minimize distortion, image blocks with the smallest variance should not be encoded. The examiner notes that if a block is not encoded, the block is skipped. Ribas further illustrates in equation 1 how the distortion relates to the quantization. Therefore the rejection has been maintained.

On page 10, applicant argues that Walker fails to disclose skipping  $(f_s-1)$  uncoded objects where the claimed skip parameter  $f_s$  is based on a source frame rate divided by an average coded frame rate. While the applicant's points are understood, the examiner respectfully disagrees. The skip parameter,  $f_s$ , being based on a source frame rate divided by an average coded frame rate is the subject matter of objected claim 6 and is not found in the particular claim 4. What is found in the claim is skipping  $(f_s-1)$  uncoded objects in which Walker illustrates in figure 6. Therefore the rejection has been maintained.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (6222881) in view of Ribas-Corbera et al. (6396956), (hereinafter referred to as "Ribas").

Regarding claim 1, Walker discloses an apparatus for encoding and decoding video signals (Walker: column 1, lines 13-15). This apparatus comprises "determining and encoding a quantizer parameter and skip parameter that minimizes an average distortion" (Walker: figure 6, column 6, lines 44-46, wherein the skip parameter indicates an object to be encoded as a skipped block, column 16, lines 23-26, wherein the quantizer parameter is the quantization level, column 10, lines 25-30, wherein the distortion is the noise), "skipping the candidate objects as uncoded objects with the skip parameter" (Walker: figure 6, column 6, lines 44-46, wherein the skip parameter indicates an object to be skipped from the encoding process), and "the average distortion including spatial and temporal distortion of objects" (Walker: column 10, lines 25-30, wherein the distortion is the noise). Although Walker fails to use the term "distortion", Walker does disclose determining whether image data is acceptable or not in figure 6, conditions 610 and 614. However, Walker fails to

disclose the average total distortion is based on a quantizer and skip parameter.

Ribas teaches that block and frame skipping and quantization parameters reduce the distortion of an image (Ribas: column 2, lines 57-65, column 3, line 62 – column 4, line 3, column 6, line 66 – column 7, line 6). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Walker and add the quantization parameters and frame skipping taught by Ribas in order to obtain an apparatus that produces a high quality video signal by minimizing distortion.

3. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (6222881) in view of Ribas-Corbera et al. (6396956), (hereinafter referred to as "Ribas") in further view of Ito et al. (6377309), (hereinafter referred to as "Ito").

Regarding claim 2, note the examiners rejection for claim 1, and in addition, claim 2 differs from claim 1 in that claim 2 further requires the object being a video object plane. Ito teaches that it is well known in the MPEG environment that video data can be called a video object plane (VOP) (Ito: column 5, lines 40-43). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Walker, add the quantization parameters and frame skipping taught by Ribas, and add the video object plane taught by Ito since it is well known in the art to do so.

Regarding claim 3, Walker discloses “the object is a video frame having rectangular shape and fixed size” (Walker: column 26, lines 15-18, wherein the video frame is the frame, the fixed size is the fixed parameters).

Regarding claim 4, Walker discloses “skipping ( $f_s - 1$ ) uncoded objects” (Walker: figure 6, wherein the ( $f_s - 1$ ) uncoded objects is determined by comparing the differences with the threshold).

Regarding claim 5, Ito discloses “encoding multiple objects concurrently” (Ito: figure 4, wherein the objects are encoded in parallel).

#### ***Allowable Subject Matter***

4. Claims 6-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Czekaj whose telephone number is (571) 272-7327. The examiner can normally be reached on Monday - Friday 9 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJC

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TC 2600